12-2011

The Feathers of Winter

Paul A. Johnsgard
University of Nebraska-Lincoln, pajohnsgard@gmail.com

American crow, December 2009. (Paul A. Johnsgard)

Published in *Prairie Fire* 5:12 (December 2011), pp. 17–20.

The Feathers of Winter

By Paul A. Johnsgard

For many Nebraska birders, the last big event of the year is the Audubon Christmas Bird Count, which is held annually during the last week of December. It is an occasion to join with friends in a day out to try see as many species as possible in a single day. More importantly, it provides a database that, combined with those of more than 50,000 other observers, provides a highly documented population sample of early-winter birds throughout North America, Latin America and the Caribbean region. The tradition began in 1900, and as of 2011 there have been 111 national counts. Nebraska counts began in Lincoln and Omaha

in 1909. In recent years there have usually been about 10 counting locations in Nebraska, with notably long sequences having developed in Lincoln, Omaha, Scottsbluff and at Lake McConaughy. This last-named location invariably has the highest state count, often tallying about 100 species, whereas species counts from Lincoln and Omaha are usually in the 70s (Johnsgard, 1998). Since 1988, The Great Backyard Bird Count has attempted to measure February birds, with an emphasis on species likely to be seen in backyards and near homes. During the 2011 counts in Nebraska, 105 species and over 300,000 birds were counted.

Four years ago I decided that I could exploit the Christmas count's vast amount of population data to test the idea that moderating winter climates in the Great Plains during the past half-century may have resulted in a northward shift of early-winter bird populations. I chose about 200 bird species known to winter in the Great Plains and selected a 40-year period from the winters of 1967-68 to 2006-07 for my study. As I was teaching an ornithology class at Cedar Point in the summer of 2008, I decided to make an analysis of these data a class project. I asked(demanded) each of my 18 students to analyze statistically the count data of 11 species, and for every state from North Dakota through the Texas panhandle, over the four-decade intervals.

After all these data had been accumulated, I began to summarize them, and asked my long-time friend Tom Shane to help with the analysis. Tom agreed to work out associated winter range maps for the region but left the analysis and write-up to me. Details of the 380-page study can be found elsewhere (Johnsgard and Shane, 2009). Only the Nebraska results will be discussed here, but it is worth noting that a large proportion of the species studied exhibited a significant northward winter movement in their abundance peaks, which often shifted one state northward and sometimes moved even farther north. These results support the increasingly accepted position that significant climatic warming has been occurring in the Great Plains since at least the 1960s.

It is also of interest to consider those species of particular winter abundance in Nebraska, whose identities and numbers have never before been estimated. It should be remembered that most of the Christmas Counts are centered in cities (the count areas consist of circles 15 miles in diameter), so the resulting numbers are probably biased toward urban and suburban birds, such as starlings and house sparrows. Some birders also choose to concentrate on watching bird feeders rather than doing outside surveys, which means that typical backyard birds are well represented. Lakes and reservoirs are also attractive counting sites, which results in large numbers of waterfowl and other aquatic birds being counted. Yet, because of the large number of counts and counters, a fair representation survey of a state's winter bird life is possible.

Typical aquatic birds that appear in the greatest numbers on Nebraska's Christmas Counts are the common mallard, Canada goose, and common merganser. All are large, cold-tolerant birds, which will overwinter wherever open water can be found. The Canada goose has increased markedly in Nebraska over the time period studied, while the mallard has apparently shifted its major early-

Harris's sparrow, February 2007. (Paul A. Johnsgard)

winter population northward into South Dakota. Common mergansers have remained concentrated farther south in Oklahoma; a certainty of open water is necessary for these fish-eating ducks.

Red-winged blackbirds are seed- and grain-eating birds that concentrate in grain fields during fall but gravitate to marshlands during winter. They are one of the most abundant of all North American land birds, with a continental population estimated at more than 200 million (Rich et al., 2004). European starlings are far more city adapted than red-winged blackbirds, and in many cities are easily the most common species year-round. In the same manner, the also-introduced house sparrow is most at home in cities but extends into the country around farms and homesteads. Both species are nonmigratory and appear to be in decline, at least in Nebraska.

American tree sparrows are remarkably cold tolerant considering their tiny size, with maximum early-winter densities in Kansas. They tend to remain in the country, scratching on the ground for seeds in snow-free sites, but will rarely visit bird feeders. Their continental population has been estimated at about 26 million birds.

Horned larks are strictly open-country birds and in Nebraska are likely to be seen in snow-free grain fields, sometimes in large roaming flocks and frequently in the company of Lapland longspurs and snow buntings. None of these relatively abundant species is likely to be seen within the city limits of a town.

American goldfinch, January 2008. (Paul A. Johnsgard

American robins are familiar backyard birds during summer, but as cold weather moves into Nebraska they flock up and move variably southward, depending on the intensity of the winter and the availability of fruits, their primary winter diet. The robin is the only species described here that has seemingly shifted its population density south in the past half-century. This is probably a statistical anomaly, but wintering robins are highly nomadic, and flocks reaching as high as 10 million birds have been reported in the southeastern states. Their continental population has been estimated as about 320 million.

Judging from the available Christmas Count data, Nebraska may be the nation's best state in which to see Harris's sparrows during early winter. They migrate south from their arctic nesting areas of central Canada to winter in the central Great Plains, especially eastern Nebraska. They mostly are then found in country habitats that offer weedy grasslands, brushlands, or open woodlands. They come to feeders only during times of severe weather, sometimes in the company of white-throated or white-crowned sparrows. American crows may also be found in habitats ranging from open country, which they scavenge widely for food, to fairly heavy woods, where they roost, sometimes in very large flocks. In recent decades crows have become increasingly common in towns and cities, where they may look for suet in bird feeders but remain much more wary than woodpeckers or blue jays.

Except for the cedar waxwing, all of the remaining species listed as abundant Nebraska wintering birds are typical bird-feeder species. The cedar waxwing is a berry and fruit-eater, especially favoring juniper (red cedar) berries, which mammals find too bitter to consume. As such, cedar waxwings inhabit shelterbelts and other places where junipers are present, and in towns seek out crab apples or other ornamental fruiting trees. Red cedars are abundant across the Great Plains and largely account for the species' winter abundance here.

In sequence of their seeming descending winter abundance in Nebraska, the remaining species are northern cardinal, dark-eyed junco, black-capped chickadee and house finch. Of these, the house finch is a relative newcomer to eastern Nebraska, having invaded the state in the 1960s from the east, although a small population has long been resident in the panhandle. It quickly became addicted to bird-feeding stations and has gradually tended to displace the more skittish house sparrows in abundance at backyard bird feeders. Northern cardinals have also expanded their range in Nebraska during the past half-century, slowly moving farther north as winters have moderated in severity and becoming favorites of people willing to provide them with unlimited black-oil sunflower seeds.

The black-capped chickadee is perhaps the tamest and thus most visually appealing of all the bird-feeder species in Nebraska, although white-breasted and red-breasted nuthatches might win in the tameness category. Dark-eyed juncos are probably the most abundant wintering songbird in Nebraska and the entire Great Plains. Their continental abundance has been estimated at 260 million birds, easily edging out the cardinal's 100 million, the chickadee's 34 million and the house finch's 21 million.

Over the 40 years of study, 10 of the 18 species have exhibited apparent population increases in the final decade relative to their long-term Nebraska averages, three have been apparently stable and five have shown apparent declines. Over the same period, 12 species have exhibited apparent northward statewide population shifts judging from average state density estimates, one species (the American robin) has seemingly moved south and six have shown no statewide shifts.

Nebraska data from 2011 for The Great Backyard Bird Counts provide a slightly different view of winter birds in the state. Based on the number of checklists reporting the species, the 10 most commonly encountered birds were (in descending order) American robin, American goldfinch, downy woodpecker, house sparrow, blue jay, house finch, black-capped chickadee, Canada goose, European starling and mourning dove. Surprisingly, the most abundant single species seen was the snow goose, which is far from being a "backyard" bird but is often seen flying over towns in great flocks.

References

Johnsgard, P. A. 1998. A half-century of winter bird surveys at Lincoln and Scottsbluff, Nebraska. *Nebraska Bird Review* 66:74-84.

Johnsgard, P. A. and T. Shane. 2009. *Four Decades of Christmas Bird Counts in the Great Plains: Ornithological Evidence of a Changing Climate*. 380 pp. URL: http://digitalcommons.unl.edu/biosciomithology/46/

Rich, T. D. et al. 2004. *Partners in Flight North American Landbird Conservation Plan*. Ithaca, N.Y.: Cornell University Laboratory of Ornithology.

Dr. Paul A. Johnsgard is a retired University of Nebraska professor. His book webpage is http://pauljohnsgardbooks.tripod.com . Many of his publications are available online at http://digitalcommons.unl.edu/johnsgard/